A STUDY ON FUNDUS FINDINGS IN PREGNANCY INDUCED HYPERTENSION

ABSTRACT

INTRODUCTION : Hypertensive disorders in pregnancy are considered the major cause of maternal morbidity and mortality in developing as well as developed countries. It is the most common medical problem in pregnancy, complicating 7–10% of all pregnancies. The biggest limitation clinicians face is differentiating pregnancy induced hypertension from hypertension independent of pregnancy. Pregnancy can affect anywhere in the visual pathway from anterior segment to the visual cortex. Ocular sequelae of 30 – 100% is seen in patients with HELLP syndrome. Retinal and cerebral vessels share a lot of anatomical and embryological characteristics. Hence they may show similar patterns of damage from diseases like hypertension. This also suggests that examination of ocular fundus would provide a noninvasive view of intracranial vascular pathology. Fundus changes also plays an important role in determining the termination of pregnancy. This study has been done to understand if fundus findings correlate with the severity of hypertension, grades of proteinuria and levels of blood urea and serum uric acid.

AIM: The aim of this study is to determine the prevalence of retinal changes in pregnancy induced hypertension and to understand the association between retinal changes and severity of hypertension and proteinuria.

MATERIALS AND METHODS: A total of 100 patients admitted with pregnancy induced hypertension were included in this study. Patients with pre-existing hypertension, diabetes mellitus and renal disease and patients with raised blood sugar values were excluded from this study.

Their age and gravida were noted. Vision was checked and anterior segment examined. Fundus was examined. Blood pressure, grade of proteinuria, blood urea levels and serum uric acid levels were noted. Comparative study was done to find out if fundus findings had any correlation with the severity of hypertension, grades of proteinuria, blood urea and serum uric acid levels.

OBSERVATION : Maximum number of PIH cases were found in the age group of 21-25 years. 60% of the cases were seen in primigravidas. 54 patients had mild preeclampsia, 40 patients had severe preeclampsia and the rest 6 had eclampsia with seizures. Maximum number of patients(49) had grade 1+ proteinuria, 36 patients had grade 2+ proteinuria and only 15 patients had grade 3+ proteinuria. Maximum number of patients had either normal fundus (41%) or grade 1 hypertensive retinopathy (24%). 22% had grade 2, 6% had grade 3 and 2% of the cases had grade 4 hypertensive retinopathy. Another 2 % had macular edema. 3% of the cases studied showed central serous retinopathy. 54% of the cases studied had hypertensive retinopathy. This makes hypertensive retinopathy as the most frequently noted sign in PIH. Fisher's exact test was done between all the variables. There was no association of fundus findings with age or gravida of the patient. A significant positive correlation was found between fundus findings and severity of hypertension and proteinuria(P value < 0.001). Logistic regression analysis was also done, which gave similar results. In the present study, blood urea levels in mild preeclampsia group ranged from 9mg/dl to 40mg/dl with a mean value of 20.75mg%. In severe preeclampsia group, it ranged from 10 to 71mg/dl with a mean value of 27.67mg/dl. And in eclampsia group, blood urea levels ranged from 14 to 52mg/dl with a mean of 31.33mg/dl. Serum uric acid levels ranged from 2.6 to 11.2mg% in mild preeclampsia group with a mean of 4.98mg%. In severe preeclampsia group, it ranged from 3.1 to 9.2mg% with mean value of 5.82mg/dl. In eclampsia patients, the value ranged from

4.3 to 12.6mg% with a mean of 9.58mg%. This suggested a positive correlation between the severity of hypertension and blood urea and serum uric acid levels.

CONCLUSION : This study suggested a positive correlation of fundus findings with severity of hypertension and grade of proteinuria. The present study also suggested correlation of severity of hypertension with blood urea and serum uric acid levels. This study conveys the importance of routine fundus examination in all patients with pregnancy induced hypertension. Retinal changes is an important indicator in deciding the termination of pregnancy. Also, since there are anatomical and embryological similarities between the retinal and cerebral microcirculation, fundus changes may also suggest an underlying intracranial vascular pathology.